

IN THE CLAIMS:

Please amend the claims to read as follows:

Claim 1 (Currently Amended): A data-driving apparatus of an electro-luminescence display panel, comprising:

a display panel receiving a current signal to display an image; and

a data driver having a plurality of current sink data drive parts in order to supply data to the display panel based on a constant current, ~~wherein~~ at least one of the plurality of current sink data drive parts including comprises:

a current sink data drive integrated circuit for supplying the data to the display panel based on the constant current, and

a reference current supply/path part for supplying the constant current to the current sink data drive integrated circuit and supplying the same constant current to an adjacent current sink data drive part in a cascade circuit configuration, the reference current supply/path part including

a first switching device connected between a second voltage source and the ground voltage source,

a second switching device connected to the ground voltage source to form a current mirror circuit with the first switching device,

a third switching device connected to the ground voltage source to form a current mirror circuit with the first switching device and, in addition, connected to a drain terminal of the constant current switching device of the current sink data drive integrated circuit,

a fourth switching device connected between the second switching device and a third voltage source, and

a fifth switching device connected to the third voltage source to form a current mirror circuit with the fourth switching device for transmitting the constant current to the adjacent current sink data drive part.

Claim 2 (Original): The data-driving apparatus according to claim 1, wherein the current sink data drive integrated circuit comprises:

a constant current switching device connected between a voltage source and a ground voltage source; and

a plurality of constant current supply switching devices, each connected to the ground voltage source to form a current mirror circuit with the constant current switching device for supplying the constant current to data lines of the panel by way of selecting switch devices corresponding to the constant current controlled at a 2^n level through the constant current switching device.

Claim 3 (Original): The data-driving apparatus according to claim 2, wherein the current sink data drive integrated circuit further comprises:

a plurality of switches connected between the constant current supply switching devices and the data lines for controlling a supply time of the constant current supplied to the data lines to control a pulse width of a current signal.

Claim 4 (Original): The data-driving apparatus according to claim 2, wherein the constant current switching device and the constant current supply switching device comprise n-type MOSFETs.

Claim 5 (Canceled).

Claim 6 (Currently Amended): The data-driving apparatus according to claim [[5]] 1, wherein the first to third switching devices comprise n-type MOSFETs.

Claim 7 (Currently Amended): The data-driving apparatus according to claim [[5]] 1, wherein the fourth and fifth switching devices comprise p-type MOSFETs.

Claim 8 (Currently Amended): The data-driving apparatus according to claim [[5]] 1, wherein the third switching device is integrated with the current sink data drive integrated circuit.

Claim 9 (Currently Amended): A data-driving apparatus of an electro-luminescence display panel, comprising The data-driving apparatus according to claim 3, wherein the reference current supply/path part comprises:

a display panel receiving a current signal to display an image; and

a data driver having a plurality of current sink data drive parts in order to supply data to the display panel based on a constant current, at least one of the plurality of current sink data drive parts including

a current sink data drive integrated circuit for supplying the data to the display panel based on the constant current wherein the current sink data drive integrated circuit includes a constant current switching device connected between a voltage source and a ground voltage source, a plurality of constant current supply switching devices, each connected to the ground voltage source to form a current mirror circuit with the constant current switching device for supplying the constant current to data lines of the panel by way of selecting switch devices corresponding to the constant current controlled at a 2^n level through the constant current switching device, and a plurality of switches connected between the constant current supply switching devices and the data lines for controlling a supply time of the constant current supplied to the data lines to control a pulse width of a current signal, and

a reference current supply/path part for supplying the constant current to the current sink data drive integrated circuit and supplying the same constant current to an adjacent current sink data drive part in a cascade circuit configuration, the reference current supply/path part including a first switching device connected between a second voltage source and the ground voltage source, [;]]

a second switching device connected to the second voltage source to form a current mirror circuit with the first switching device,[[;]]

a third switching device connected between the second switching device and the ground voltage source to respond to a current control signal passing through the second switching device,[[;]]

a fourth switching device connected to the ground voltage source to form a current mirror circuit with the third switching device for supplying the constant current to the adjacent current sink data drive part,[[;]]and

a fifth switching device connected to the ground voltage source to form a current mirror circuit with the third switching device and, at the same time, connected to a drain terminal of the constant current switching device of the current sink data drive integrated circuit.

Claim 10 (Original): The data-driving apparatus according to claim 9, wherein the first and second switching devices comprise p-type MOSFETs.

Claim 11 (Previously Presented): The data-driving apparatus according to claim 9, wherein the third to fifth switching devices comprise n-type MOSFETs.

Claim 12 (Previously Presented): The data-driving apparatus according to claim 9, wherein the fifth switching device is integrated with the current sink data drive integrated circuit.

Claim 13 (Currently Amended): A data-driving apparatus of an electro-luminescence display panel, comprising: The data-driving apparatus according to claim 1,

a display panel receiving a current signal to display an image, wherein the display panel including includes a pixel formed at each intersection part of scan lines and data lines, and the pixel has an electro-luminescence cell and a cell driver, wherein the cell driver includes comprises:

a first sixth switching device formed between a cell drive voltage source VDD and the electro-luminescence cell for driving the electro-luminescence cell,[[;]]

a second seventh switching device connected to the cell drive voltage source to form a current mirror with the sixth first switching device,[[;]]

an third eighth switching device connected to the seventh second switching device, the scan line and the data line to respond to a signal of the data line,[[;]]

a fourth ninth switching device connected gate terminals of the sixth first and seventh second switching devices, the data line and the eighth third switching device,[[;]] and a capacitor Cst connected between the cell drive voltage source VDD and the gate terminals of the sixth first and seventh second switching devices; and

a data driver having a plurality of current sink data drive parts in order to supply data to the display panel based on a constant current, at least one of the plurality of current sink data drive parts including

a current sink data drive integrated circuit for supplying the data to the display panel based on the constant current, and

a reference current supply/path part for supplying the constant current to the current sink data drive integrated circuit and supplying the same constant current to an adjacent current sink data drive part in a cascade circuit configuration.

Claim 14 (Currently Amended): A data-driving apparatus of an electro-luminescence display panel, comprising:

a display panel receiving a current signal to display an image; and
a data driver having a plurality of current source data drive parts to supply data to the display panel based on a constant current, ~~wherein~~ at least one of the plurality of current source data drive parts including comprises:

a current source data drive integrated circuit for supplying the data to the display panel based on the constant current, the current source data drive integrated circuit including a constant current switching device connected between a voltage source and a ground voltage source, and a plurality of constant current supply switching devices, each constant current supply switching device connected to the voltage source to form a current mirror circuit with the constant current switching device for supplying the constant current to data lines of the panel by selecting switch devices corresponding to the constant current controlled in a 2nd level through the constant current switching device,[[;]] and

a reference current supply/path part for supplying the constant current to the current source data drive integrated circuit and supplying the same constant current to an adjacent current

source data drive part in a cascade circuit configuration, the reference current supply/path part including

a first switching device connected between a second voltage source and the ground voltage source,

a second switching device connected to the ground voltage source to form a current mirror circuit with the first switching device,

a third switching device connected to the ground voltage source to form a current mirror circuit with the first switching device and, in addition, connected to a drain terminal of the constant current switching device of the current source data drive integrated circuit,

a fourth switching device connected between the second switching device and a third voltage source, and

a fifth switching device connected to the third voltage source to form a current mirror circuit with the fourth switching device for transmitting the constant current to the adjacent current source data drive part.

Claim 15 (Canceled).

Claim 16 (Currently Amended): The data-driving apparatus according to claim [[15]] 14, wherein the current source data drive integrated circuit further comprises a plurality of switches connected between the constant current supply switching devices and the data lines for

controlling a supply time of the constant current supplied to the data lines to control a pulse width of a current signal.

Claim 17 (Currently Amended): The data-driving apparatus according to claim [[15]] 14, wherein the constant current switching device and the constant current supply switching device comprise n-type MOSFETs.

Claim 18 (Canceled).

Claim 19 (Currently Amended): The data-driving apparatus according to claim [[18]] 14, wherein the first to third switching devices comprise n-type MOSFETs.

Claim 20 (Currently Amended): The data-driving apparatus according to claim [[18]] 14, wherein the fourth and fifth switching devices comprise p-type MOSFETs.

Claim 21 (Currently Amended): The data-driving apparatus according to claim [[18]] 14, wherein the third switching device is integrated with the current source data drive integrated circuit.

Claim 22 (Currently Amended): A data-driving apparatus of an electro-luminescence display panel, comprising ~~The data driving apparatus according to claim 16, wherein the reference current supply/path part comprises:~~

a display panel receiving a current signal to display an image; and

a data driver having a plurality of current source data drive parts to supply data to the display panel based on a constant current, at least one of the plurality of current source data drive parts including

a current source data drive integrated circuit for supplying the data to the display panel based on the constant current, the current source data drive integrated circuit including a constant current switching device connected between a voltage source and a ground voltage source, a plurality of constant current supply switching devices, each constant current supply switching device connected to the voltage source to form a current mirror circuit with the constant current switching device for supplying the constant current to data lines of the panel by selecting switch devices corresponding to the constant current controlled in a 2nd level through the constant current switching device, and a plurality of switches connected between the constant current supply switching devices and the data lines for controlling a supply time of the constant current supplied to the data lines to control a pulse width of a current signal, and

a reference current supply/path part for supplying the constant current to the current source data drive integrated circuit and supplying the same constant current to an adjacent current source data drive part in a cascade circuit configuration, the reference current supply/path part including

a first switching device connected between a second voltage source and the ground voltage source₁[[;]]

a second switching device connected to the second voltage source to form a current mirror circuit with the first switching device₁[[;]]

a third switching device connected between the second switching device and the ground voltage source to respond to a current control signal passing through the second switching device₁[[;]]

a fourth switching device connected to the ground voltage source to form a current mirror circuit with the third switching device for supplying the constant current to the adjacent current source data drive part₁[[;]] and

a fifth switching device connected to the ground voltage source to form a current mirror circuit with the third switching device and, at the same time, connected to a drain terminal of the constant current switching device of the current source data drive integrated circuit.

Claim 23 (Original): The data-driving apparatus according to claim 22, wherein the first and second switching devices comprise p-type MOSFETs.

Claim 24 (Original): The data-driving apparatus according to claim 22, wherein the third to fifth switching devices comprise n-type MOSFETs.

Claim 25 (Original): The data-driving apparatus according to claim 22, wherein the fifth switching device is integrated with the current sink data drive integrated circuit.

Claim 26 (Currently Amended): A data-driving apparatus of an electro-luminescence display panel, comprising: The data driving apparatus according to claim 14, a display panel receiving a current signal to display an image, wherein the display panel including includes a pixel formed at each intersection part of scan lines and data lines, and the pixel has an electro-luminescence cell and a cell driver, wherein the cell driver includes comprises:

a first sixth switching device formed between a ground voltage source GND and the electro-luminescence cell for driving the electro-luminescence cell,[[;]]
a second seventh switching device connected to the ground voltage source GND to form a current mirror with the sixth first switching device,[[;]]
an third eighth switching device connected to the seventh second switching device, the scan line and the data line to respond to a signal of the data line,[[;]]
a fourth ninth switching device connected gate terminals of the sixth first and seventh second switching devices, the data line and the eighth third switching device,[[;]] and a capacitor Cst connected between the ground voltage source GND and the gate terminals of the sixth and seventh switching devices; and

a data driver having a plurality of current source data drive parts to supply data to the display panel based on a constant current, at least one of the plurality of current source data drive parts including

a current source data drive integrated circuit for supplying the data to the display panel based on the constant current, and

a reference current supply/path part for supplying the constant current to the current source data drive integrated circuit and supplying the same constant current to an adjacent current source data drive part in a cascade circuit configuration.

Claim 27 (Canceled).

Claim 28 (Canceled).